

Climatic conditions associated to the occurrence of slope instabilities in the Italian Alps in year 2016

Original

Climatic conditions associated to the occurrence of slope instabilities in the Italian Alps in year 2016 / Paranunzio, Roberta; Chiarle, Marta; Laio, Francesco; Luino, Fabio; Nigrelli, Guido; Turconi, Laura. - In: GEOPHYSICAL RESEARCH ABSTRACTS. - ISSN 1607-7962. - 19:(2017), pp. 13227-13227.

Availability:

This version is available at: 11583/2671672 since: 2017-05-23T10:28:51Z

Publisher:

Copernicus Publications

Published

DOI:

Terms of use:

openAccess

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

(Article begins on next page)

Climatic conditions associated to the occurrence of slope instabilities in the Italian Alps in year 2016

Roberta Paranunzio (1), Marta Chiarle (2), Francesco Laio (1), Fabio Luino (2), Guido Nigrelli (2), and Laura Turconi (2)

(1) DIATI - Dipartimento di Ingegneria dell'Ambiente, del Territorio e delle Infrastrutture, Politecnico di Torino, Italy (roberta.paranunzio@polito.it), (2) CNR-IRPI, Turin, Italy (marta.chiarle@irpi.cnr.it)

Studies carried out in different parts of the world have shown that, in the mountain high-elevation sites, temperature can play a major role in the preparation and trigger of slope instabilities. However, the interplay with other climatic parameters (in particular precipitation) and the nature of the climate-driven processes that lead to the development of slope instability continue to be poorly understood. This understanding is crucial in order to define reliable scenarios of the evolution of slope instability under the expected climatic and environmental changes.

The present work aims to contribute to shed light on these issues by analyzing with the statistical and probabilistic method developed by Paranunzio et al. (2016) the values of the climatic parameters associated to the most significant events of slope instability occurred at high elevation in the Italian Alps in 2016. The method allows to detect the anomalies in temperature and precipitation values that are associated to the development of these slope instabilities, providing the ground for discussion of possible causes and triggering mechanisms, also in the framework of ongoing climate change.

Paranunzio R., Laio F., Chiarle M., Nigrelli G., Guzzetti F. (2016) - Climate anomalies associated to the occurrence of rockfalls at high-elevation in the Italian Alps. *Natural Hazards and Earth System Sciences*, 16, 2085-2106, DOI: 10.5194/nhess-16-2085-2016;